



Actuarial Valuations: Let's use "Real Data" not "Alternative Data"

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John Farris

Chairman, Board of Directors
Kentucky Retirement Systems

RESULTS OF LAST EXPERIENCE STUDY

“STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS**

The assumptions and methods used in the valuation were based on the actuarial experience study for the five-year period ending June 30, 2013, submitted April 30, 2014, and adopted by the Board on December 4, 2014.

INVESTMENT RATE OF RETURN: 6.75% per annum for Non-Hazardous Pension Plan; 7.50% per annum for Hazardous Plans and the Non-Hazardous Insurance Plan, compounded annually for retirement and insurance benefits.

PRICE INFLATION: 3.25% per annum, compounded annually.






PAYROLL GROWTH: 4.00% per annum, compounded annually.”

****<https://kyret.ky.gov/Actuarial%20Valuations/2016%20Actuarial%20Valuation.pdf>**

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KRS FY 7/1/2008 – 6/30/2013 (5 Years)

		Average Annual Payroll Growth/(Decline)	Average Annual Investment Earnings*	Average Annual CPI-U
	KERS Non-Hazardous	(2.51%)	4.75%	1.28%
	KERS Hazardous	(2.32%)	4.75%	1.28%
	CERS Non-Hazardous	0.65%	4.75%	1.28%
	CERS Hazardous	(0.55%)	4.75%	1.28%
	SPRS	(3.17%)	4.75%	1.28%

CURRENT INFLATION ASSUMPTION: 3.25%

*WHY ARE THE ACTUAL NUMBERS DIFFERENT FROM ACTUARIAL ASSUMPTIONS
APPROVED BY BOARD?*

Sensitivity Analysis

Retirement Funds

Payroll Growth Assumptions			
	Payroll Growth	Funded Status	Contribution Rate
KERS Non-hazardous	Current 4.0%	16.0%	42.0%
	Alternative 2.0%	16.0%	51.6%
	Alternative 0.0%	16.0%	62.7%
KERS Hazardous	Current 4.0%	59.7%	20.5%
	Alternative 2.0%	59.7%	24.0%
	Alternative 0.0%	59.7%	28.0%
CERS Non-hazardous	Current 4.0%	59.0%	14.5%
	Alternative 2.0%	59.0%	17.2%
	Alternative 0.0%	59.0%	20.3%
CERS Hazardous	Current 4.0%	57.7%	22.2%
	Alternative 2.0%	57.7%	26.6%
	Alternative 0.0%	57.7%	31.7%
SPRS	Current 4.0%	30.3%	71.6%
	Alternative 2.0%	30.3%	87.2%
	Alternative 0.0%	30.3%	105.3%
Conclusion: Payroll growth assumption does not affect funded status <u>but</u> drastically affects the contribution rate. Current = 2016 Valuation. See appendix for payroll growth trends.			

Sensitivity Analysis

Retirement Funds

Inflation Assumptions			
	Inflation Assumptions	Funded Status	Contribution Rate
KERS Non-hazardous	Current 3.25%	16.0%	42.0%
	Alternative 2.75%	15.3%	44.9%
KERS Hazardous	Current 3.25%	59.7%	20.5%
	Alternative 2.75%	57.0%	23.1%
CERS Non-hazardous	Current 3.25%	59.0%	14.5%
	Alternative 2.75%	56.4%	16.2%
CERS Hazardous	Current 3.25%	57.7%	22.2%
	Alternative 2.75%	55.0%	25.2%
SPRS	Current 3.25%	30.3%	71.6%
	Alternative 2.75%	28.9%	77.4%
Reduction also lowers payroll growth and discount rate by 0.50% Current = 2016 Valuation			






Sensitivity Analysis

Retirement Funds

Investment Return (Discount Rate)			
	Discount Rate	Funded Status	Contribution Rate
KERS Non-Hazardous	Current 6.75%	16.0%	42.0%
	Alternative 5.75%	14.4%	44.3%
KERS Hazardous	Current 7.50%	59.7%	14.5%
	Alternative 6.50%	53.9%	25.4%
CERS Non-Hazardous	Current 7.50%	59.0%	14.5%
	Alternative 6.50%	52.3%	18.2%
CERS Hazardous	Current 7.50%	57.7%	22.2%
	Alternative 6.50%	51.7%	27.5%
SPRS	Current 6.75%	30.3%	71.6%
	Alternative 5.75%	27.3%	77.5%
Conclusion: Better funded plans are more affected by changes in the discount rate. Current = 2016 Valuation			



KRS FY 2012-2016

		Average Annual Payroll Growth/(Decline)	Annualized Investment Earnings	Average Annual CPI-U
	KERS Non-Hazardous	(2.44%)	4.52%	1.40%
	KERS Hazardous	+3.26%	4.80%	1.40%
	CERS Non-Hazardous	(0.66%)	4.85%	1.40%
	CERS Hazardous	+0.98%	4.87%	1.40%
	SPRS	(1.28%)	4.85%	1.40%